

## Claims

1. A method of determining properties of a signal transmission channel between a first subscriber end point and a second subscriber end point of a telephone network having a plurality of subscribers, wherein a first subscriber terminal (1) is connected to said first subscriber end point and a second subscriber terminal (8) is connected to said second subscriber end point, wherein said telephone network (3, 4, 5, 6) upon request of a subscriber establishes a signal transmission channel between said first subscriber and said second subscriber, wherein said first subscriber end point is connected to the telephone network by a digital channel portion (2), said method comprising the steps of:

said first subscriber terminal sending to said second subscriber terminal a digital probing signal comprising a sequence of frames, each frame comprising at least one frame portion, each frame portion comprising a sequence of digital symbols, each symbol having a plurality of bits, wherein each frame comprises a preset number of symbols, wherein the digital values of symbols in a frame portion are equal, and wherein the digital values of adjacent frame portions is significantly different;

said second subscriber terminal receiving a signal which is the result of said digital probing signal having been transmitted through said signal transmission channel;

said second subscriber terminal evaluating said received signal by comparing said received signal with said digital probing signal; and

said second subscriber terminal transmitting a response signal to said first subscriber terminal, said response signal carrying information about the comparison result.

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2. The method of claim 1, characterised in that a frame comprises one frame portion (Fig. 2), wherein the digital values of all symbols over all frames are equal except for one bit position of each symbol, the value of which changes with every other frame.

3. The method of claim 2, characterised in that said one bit position is the most significant bit position.

10 4. The method of claims 2 or 3, characterised in that said one bit position is the position of the sign bit.

15 5. The method of claim 1, characterised in that a frame comprises at least two frame portions (Fig. 3), wherein the digital values of all symbols in a frame are equal except for at least one pulse symbol of each frame having a significantly different digital value compared to the remaining equal values.

20 6. The method of claim 5, characterised in that one bit position of said at least one pulse symbol changes value with every other frame.

25 7. The method of claim 6, characterised in that said one bit position is the position of the sign bit.

30 8. The method of any of claims 5 to 7, characterised in that the number of equal symbols per frame is significantly higher than the number of pulse symbols.

9. The method any of claim 5 to 7, characterised in that there is one pulse symbol per frame.

35 10. The method of claim 5 or 6, characterised in that there are two pulse symbols per frame.

11. The method of any of claims 5 to 10, characterised in that the total number of symbols per frame is 80.

12. In a telephone network having a plurality of subscribers, wherein said telephone network upon request of a subscriber establishes a signal transmission channel between selected subscribers, a subscriber terminal connected to a subscriber end point of said telephone network comprising:

means for connecting said subscriber terminal to said subscriber end point, said subscriber end point being connected to the telephone network by a digital channel portion,

means for sending to a second subscriber terminal, to which a signal transmission channel has been established, a digital probing signal comprising a sequence of frames, each frame comprising a sequence of digital symbols, each symbol having a plurality of bits, wherein the digital values of all symbols over all frames are equal except for one bit position of each symbol, the value of which changes with every other frame.

13. In a telephone network having a plurality of subscribers, wherein said telephone network upon request of a subscriber establishes a signal transmission channel between selected subscribers, a subscriber terminal connected to a subscriber end point of said telephone network comprising:

means for connecting said subscriber terminal to said subscriber end point, said subscriber end point being connected to the telephone network by a digital channel portion,

means for sending to said second subscriber terminal a digital probing signal comprising a sequence of frames, each frame comprising a sequence of digital symbols, each symbol

